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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Re Patent Application of
MEKURIA

Atty. Ref.: 2466-36
Group: 2654
Examiner: A. Armstrong

Serial No. 09/388,609

Filed: September 2, 1999

For: A METHOD AND A SYSTEM FOR VOICE DIALING

July 15, 2002

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Assistant Commissioner for Patents
Washington, DC 20231

APPEAL BRIEF

Sir:

Applicant hereby appeals the Final Rejection of December 14, 2001.

REAL PARTY IN INTEREST

The real party in interest is Telefonaktiebolaget LM Ericsson, a corporation of the country of Sweden.

RELATED APPEALS AND INTERFERENCES

The appellant, the undersigned, and the assignee are not aware of any related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

STATUS OF CLAIMS

Claims 1-13 are pending and have been rejected. No claims have been substantively allowed.

STATUS OF AMENDMENTS

No amendments have been filed since the date of the Final Rejection. However, a Request for Reconsideration filed March 14, 2002 was considered by the Examiner (see the Advisory Action dated April 10, 2002).

SUMMARY OF INVENTION

Certain example embodiments of the invention relate to a speech recognition system provided in a mobile telephone. In certain embodiments, referring to the figures of the instant application for purposes of example, the speech recognition system includes a stored vocabulary 113. Words in the vocabulary 113 are arranged in a trellis structure comprising a plurality of different groups of words (i.e., the content of the respective word groups is different from one another).

A word group selection system enables a user to speak via voice commands (see audio input into A/D 103) to select at least a first of the plurality of different groups of words. The first word group that is selected is selected based upon at least a word spoken by the user. Because less than all the word groups of the vocabulary is/are selected, a limited number of groups of the entire vocabulary, less than the plurality, is searched for a word during subsequent speech recognition processes in the mobile telephone after

selection of at least the first of the plurality of groups of words. This is a significant advantage over the prior art since it enables a reduced amount of searching during speech recognition processing.

In certain embodiments, an automatic word group generation system is provided for automatically generating new groups of words for storage in the vocabulary when a number of words in or at a particular location in the vocabulary exceeds a predetermined threshold value.

ISSUE(S)

The issue presented here is whether claims 1-13 are unpatentable under 35 U.S.C. Section 103(a) over Basore (US 5,752,232) in view of Gupta (US 5,515,475).

GROUPING OF CLAIMS

- a) Claims 1-4 and 6-9 stand or fall together.
- b) Claims 5 and 10 stand or fall together.

No other claim stands or falls together with any other claim (see reasons which are clear from the discussion below).

ARGUMENT

Claims 1-13 stand finally rejected under 35 U.S.C. Section 103(a) as being allegedly unpatentable over Basore in view of Gupta. This Section 103(a) rejection is fundamentally flawed and should be reversed for at least the following reasons.

A. Claim 1 (and thus claims 2-4 and 6-9 which stand/fall therewith)

Claim 1 requires selection of a group of words based on a word spoken by a user, and thereafter in subsequent speech recognition processes searching only that selected group of words for recognizing speech input. This means that only a limited number of words needs to be searched *during speech recognition*, which is a significant advantage over the prior art. Neither Basore nor Gupta disclose or suggest this aspect of claim 1, either alone or in the alleged Section 103(a) combination.

In Basore, a user speaks a command such as "TV Schedule" (col. 4, lines 49-52). Speech recognition unit 128 recognizes this command, which includes a plurality of words, using word models from database 126, 127 (col. 4, line 54 - col. 5, line 7). Once the words "TV Schedule" spoken by the user are recognized in Basore, processor 124 retrieves an appropriate *response* which in this case is "Which programs this week?" (col. 5, lines 9-22) (this retrieving of a response is not speech recognition). Thereafter, when the user speaks the command "Help", after the word is recognized the processor 124 does not search any pre-selected group of words for speech *recognition*, but instead provides a response. In other words, Basore fails to disclose or suggest selection of a group of words based on a word spoken by a user, and thereafter in subsequent speech recognition processes searching only that selected group of words for recognizing speech input.

Basore is unrelated to the invention of claim 1 in this regard.

The final Office Action, in paragraph 8, cites Basore at col. 5, lines 20-31. However, Basore here merely discloses that when a command "Help" is issued, the application software "selects the active vocabulary in the dictionary 127 according to the application and according to the previous command or commands" for a *response* (not for

speech recognition as required by the claims). In other words, after recognizing words such as "Help" and "TV Schedule", Basore selects applications for purposes of *responses*, but not for purposes of *speech recognition* as required by claim 1.

In other words, according to the invention of claim 1 the selection of a group of words based on a word spoken by a user is part of the process of recognizing speech input. In contrast, in Basore words of the command are used to retrieve responses from application data (and the speech recognition has already been completed for the command).

Citation to Gupta cannot overcome the fundamental flaws associated with Basore explained above. Gupta also does not disclose or suggest the aforesaid aspect of claim 1. Furthermore, Gupta significantly differs from the invention of claim 1 in that the trellis vocabulary of Gupta contains a network of allophone models, where each branch of the network is one of the allophone models. Each complete path through the network is thus a sequence of models representing a word in the vocabulary. Each time an unknown utterance is to be recognized, a complicated process of determining a matching path is performed. In contrast, the trellis structure of claim 1 is used in a much different way and is not concerned with the detailed speech mechanism itself but instead with how the number of searched words can be restricted by limiting the search to a group of words at a time as recited in claim 1. Gupta fails to disclose or suggest this.

It can be seen that even if Basore and Gupta were combined under Section 103 (which applicant believes would be incorrect in any event), the invention of claim 1 still would not be met. First, neither reference discloses or suggests selection of a group of words based on a word spoken by a user, and thereafter in subsequent speech recognition

processes searching only that selected group of words *for recognizing speech input*.

Second, Gupta's trellis structure is used for recognizing separate allophones in different steps based on probability, and not for searching among a limited number of word groups as claimed herein. Thus, Gupta cannot remedy the deficiencies of Basore.

B. Claim 5 (and thus claim 10 which stands/falls therewith)

Claim 5 requires automatically generating a new group if the number of words in one group exceeds a certain, pre-set threshold value. None of the cited references disclose or suggest this aspect of claim 5. Thus, even if the references were combined as alleged in the Office Action (which applicant believes would be incorrect in any event), the invention of claim 5 still would not be met.

C. Claim 11

Claim 11 requires an automatic word group generation system for automatically generating new groups of words for storage in said vocabulary when a number of words in or at a particular location in the vocabulary exceeds a predetermined threshold value. None of the cited references disclose or suggest this aspect of claim 11. Thus, even if the references were combined as alleged in the Office Action (which applicant believes would be incorrect in any event), the invention of claim 11 still would not be met.

D. Claim 12

Claim 12 requires "means for storing a word vocabulary in trellis tree structure, wherein words in the vocabulary are arranged in a plurality of different groups of words, word group selection means for enabling a user to speak via voice commands into the mobile telephone to select a first of said plurality of different groups of words, said first group of words being selected based upon at least a word spoken by the user, and speech recognition means for comparing input speech from a user to words in said selected first group of words, so that comparing of the input speech is performed relative to said selected first group of words prior to comparing the input speech with other of the plurality of different groups of words so that a limited number of groups of the entire vocabulary is searched via said comparing during speech recognition processes." The cited art fails to disclose or suggest these aspects of claim 12, either taken alone or in the alleged combination.

None of the cited references discloses or suggests speaking word(s) into a telephone to select a first group of words, and then comparing input speech with the selected word group so that comparing of the input speech is performed relative to the selected first group prior to comparing the input speech with other of the plurality of different groups of words so that a limited number of groups of the entire vocabulary is searched via said comparing during speech recognition processes. Even if the references were combined as alleged in the Office Action, this aspect of claim 12 still would not be met. The Section 103(a) rejection is also flawed with respect to the "trellis" aspect of this claim for the reasons discussed above with respect to claim 1.

E. Claim 13

Claim 13 requires automatic word group generation means for automatically generating new groups of words for storage in said vocabulary when a number of words in or at a particular location in the vocabulary exceeds a predetermined threshold value. None of the cited references disclose or suggest this aspect of claim 13. Thus, even if the references were combined as alleged in the Office Action (which applicant believes would be incorrect in any event), the invention of claim 13 still would not be met.

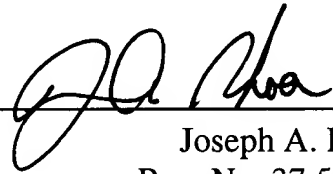
CONCLUSION

In conclusion it is believed that the application is in clear condition for allowance; therefore, early reversal of the Final Rejection and passage of the subject application to issue are earnestly solicited.

Respectfully submitted,

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APPENDIX

CLAIMS ON APPEAL

1. A speech recognition system in a mobile telephone, the speech recognition system comprising:

a stored vocabulary, wherein words in the vocabulary are arranged in a trellis structure comprising a plurality of different groups of words, and

a word group selection system for enabling a user to speak via voice commands to select at least a first of said plurality of different groups of words, said first group of words being selected based upon at least a word spoken by the user, so that a limited number of groups of the entire vocabulary, less than said plurality, is searched for a word during subsequent speech recognition processes in the mobile telephone after selection of at least the first of said plurality of groups of words.

2. A system according to claim 1, characterized in that the vocabulary is arranged in a tree structure.

3. A system according to claim 1, characterized by means for outputting the words that the system is set to recognize at a particular moment.

4. A system according to claim 3, characterized in that said means is a voice prompter.

5. A system according to claim 1, characterized by means for automatically generating a new group if the number of words in one group exceeds a certain, pre-set threshold value.

6. A method of speech recognition comprising:
providing a speech recognition system of a mobile telephone comprising a stored vocabulary, wherein the words in the stored vocabulary are arranged in a trellis structure comprising a plurality of different groups of words,

providing a word group selection system for enabling a user to speak via voice commands to select at least a first of said plurality of different groups of words, said first group of words being selected based upon at least a word spoken by the user, so that only one group or a limited number of groups of the entire vocabulary less than said plurality is searched for a word during certain subsequent speech recognition processes in the mobile telephone after selection of at least the first of said plurality of groups of words.

7. A method according to claim 6, characterized in that the vocabulary is arranged in a tree structure.

8. A method according to claim 7, characterized in that the available words that the system is set to recognize at a particular moment is output from the system.

9. A method according to claim 8, characterized in that the available words are generated by a voice prompter.

10. A method according to claim 7, characterized in that a new group automatically is generated if the number of words in one group exceeds a certain, pre-set threshold value.

11. The speech recognition system of claim 1, further comprising an automatic word group generation system for automatically generating new groups of words for storage in said vocabulary when a number of words in or at a particular location in the vocabulary exceeds a predetermined threshold value.

12. A speech recognition system in a mobile telephone, the speech recognition system comprising:

means for storing a word vocabulary in trellis tree structure, wherein words in the vocabulary are arranged in a plurality of different groups of words,

word group selection means for enabling a user to speak via voice commands into the mobile telephone to select a first of said plurality of different groups of words, said first group of words being selected based upon at least a word spoken by the user, and

speech recognition means for comparing input speech from a user to words in said selected first group of words, so that comparing of the input speech is performed relative to said selected first group of words prior to comparing the input speech with other of the plurality of different groups of words so that a limited number of groups of the entire vocabulary is searched via said comparing during speech recognition processes.

13. The speech recognition system of claim 12, further comprising automatic word group generation means for automatically generating new groups of words for storage in said vocabulary when a number of words in or at a particular location in the vocabulary exceeds a predetermined threshold value.